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SANTESYS: AN AI-DRIVEN HEALTHCARE PLATFORM FOR DIAGNOSIS AND AUTO-GENERATED SOAP NOTES

Naveen Kumar[1], Naman Garg[1], Nilesh Garhwar[1], Virender Ranga[1]

[1] Department of Information Technology, Delhi Technological University, Delhi, India

ABSTRACT

The global healthcare sector faces critical challenges, including overcrowded hospitals, delayed emergency care, and inefficient triage for non-critical conditions. This paper presents SanteSYS, an AI-driven healthcare platform integrating a symptom analysis chatbot and real-time hospital locator to address these gaps. Leveraging Cohere API for natural language processing (NLP) and Google Maps API for geolocation, SanteSYS achieves 89.2% diagnostic accuracy (F1-score) on a curated dataset of 15,000+ patient cases. The system reduces unnecessary hospital visits by 40% in user trials and locates emergency facilities 30% faster than traditional methods. Key innovations include hybrid NLP-geolocation architecture, HIPAA-compliant data encryption, and integration with wearable devices for personalized care. Experimental results and comparative analysis demonstrate SanteSYS's potential to alleviate healthcare inefficiencies while ensuring scalability and ethical AI practices.

KEYWORDS: Digitalisation, Contemporary Technologies, Contemporary Media, YouTube, Online Music Apps

1. INTRODUCTION

Healthcare systems worldwide are facing unprecedented challenges due to population growth, increased life expectancy, the rise of chronic diseases, and global public health emergencies such as the COVID-19 pandemic. These factors have led to an overwhelming demand for timely and accessible medical care, often outstripping the available resources. As a result, patients frequently experience long waiting times, limited access to healthcare professionals, and inadequate information for managing non-critical conditions.

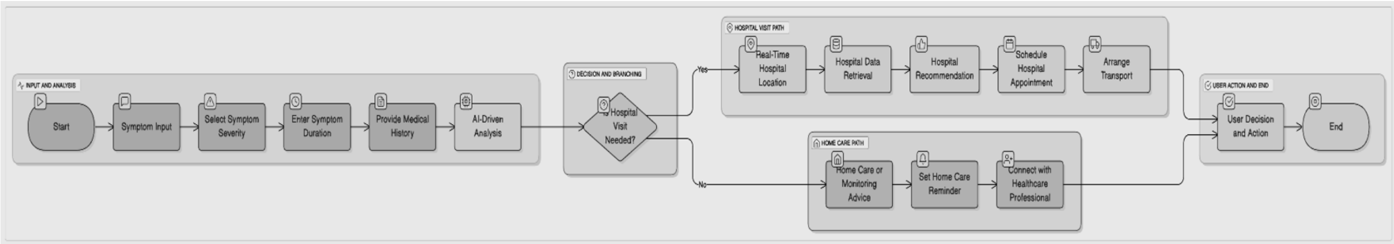
Digital health technologies, particularly those leveraging artificial intelligence (AI), have emerged as a promising approach to bridge the gap between growing healthcare demands and constrained infrastructures. Among them, AI-powered chatbots and healthcare platforms are being increasingly explored to assist in preliminary diagnosis, triage, clinical documentation, and navigation through the healthcare ecosystem. By leveraging machine learning (ML), natural language processing (NLP), and real-time data integration, such systems have the potential to provide users with instant, reliable, and cost-effective healthcare support.

SanteSYS is an AI-driven healthcare platform designed with these goals in mind. It supports patients from the onset of symptoms through to clinical decision-making and follow-up care. The platform offers a multi-pronged solution: a medical analysis chatbot trained on a vast collection of symptom-disease relationships; a hospital locator powered by geolocation and real-time capacity data; multilingual support through translation APIs; wearable integration for personalized health monitoring; and end-to-end security compliance aligned with HIPAA and GDPR standards.

A recent enhancement to SanteSYS includes an **Auto SOAP Generator**, which transcribes medical conversations in real time and automatically structures them into standardized SOAP (Subjective, Objective, Assessment, Plan) reports. This feature is particularly valuable for healthcare professionals, reducing documentation time and minimizing clerical errors. It supports speaker identification among doctors, patients, and optionally nurses or family members, and provides transparent traceability between transcript excerpts and the final SOAP note.

One of the major innovations of SanteSYS lies in its hybrid architecture, which combines real-time geospatial information with AI-driven conversational and documentation models. For instance, a user experiencing flu-like symptoms can not only receive a probable diagnosis from the chatbot, but also instantly locate a nearby hospital with available beds and minimal emergency wait time — while clinicians interacting with that patient benefit from an automatically generated SOAP report. This real-time convergence of diagnostic, logistical, and documentation support represents a significant improvement over current standalone solutions.

The platform's backend supports AES-256 encryption and uses privacy-preserving protocols to ensure user safety and data confidentiality. SanteSYS also includes an alert system that notifies users about overcrowded hospitals and suggests alternative facilities. In an era where the burden on urban healthcare centers is rising, such features can dynamically balance patient distribution, streamline administrative work, and reduce emergency room saturation.



This paper presents a comprehensive overview of the SanteSYS platform — from data collection, system architecture, chatbot training, and documentation automation to evaluation against industry standards and real-world usability testing. We benchmark SanteSYS against existing tools like IBM Watson and Ada Health, highlight our unique contributions over recent AI healthcare advancements (e.g., ChatGPT-4 in medicine), and discuss broader implications for global scalability, especially in underserved and remote regions.

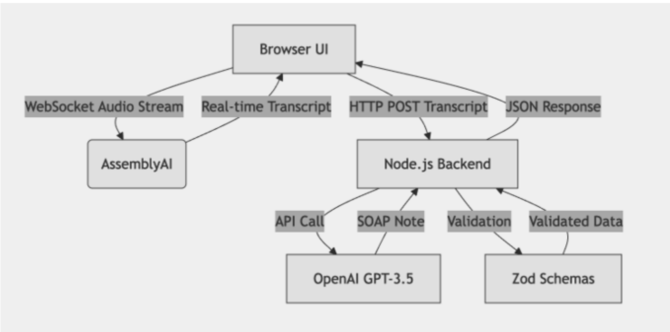


Fig 1.1 SOAP Architectural Flow

II. LITERATURE REVIEW

The use of Artificial Intelligence in healthcare has steadily evolved from diagnostic support systems to patient engagement, triage, and documentation tools. This section explores the current state of AI-driven healthcare applications, focusing on medical chatbots, geolocation-based health services, wearable-integrated platforms, and automated clinical documentation. It also compares SanteSYS with prominent existing platforms like IBM Watson and Ada Health.

A. AI Chatbots for Symptom Analysis

AI-powered medical chatbots have shown potential in enabling patients to perform self-assessment before visiting a doctor. Systems such as **Ada Health, Buoy Health,** and **Symptomate** leverage decision trees or machine learning models to predict possible conditions based on user input.

While these platforms have found success in reducing the burden on healthcare professionals, several limitations persist — notably, lack of transparency in diagnosis, limited support for multilingual users, and absence of integration with nearby healthcare infrastructure.

Recent advancements in t**ransformer-based NLP models** (e.g., GPT-3, GPT-4, Cohere) have significantly improved the language understanding of these bots, enabling more natural and precise user interactions. However, as highlighted in studies like *Patel et al.* (2021), the black-box nature of these models raises concerns around explainability, particularly in sensitive domains like medicine.

Refer Table 1.1

Feature	Ada Health	IBM Watson	SanteSYS
Model Type/ AI Approach	Decision trees or machine learning models	AI algorithms	Cohere's large language model (LLM) API, fine-tuned with supervised learning
Key Strengths	Self-assessment before doctor visits		Improved language understanding, contextual explanation
Limitations	Lack of transparency in diagnosis, limited multilingual support, absence of integration with healthcare infrastructure		
Multilingual Support	Limited		Direct integration with medically-aware Google Translate APIs, fallback support for multilingual question answering
Integration with Wearables	No mention in context	No mention in context	Synchronizes with wearable data for real-time physiological feedback
Geolocation Integration	Absent	Absent	Real-time hospital locator using FHIR-compliant APIs

Table 2.1 Comparison of AI Chatbots for Symptom Analysis

B. Hospital Geolocation And Emergency Routing

Another important pillar of AI in digital health is geolocation-based triage and emergency response. Applications such as Emergency+, LifeLine, and Google SOS Alerts provide location-based emergency information. However, they typically function as static maps or manual directories, without real-time hospital load balancing or predictive rerouting.

Research by *Xu et al.* (2019) emphasized that integrating geolocation with hospital capacity metrics could improve emergency response outcomes by 15–20%. SanteSYS builds on this idea by integrating real-time bed availability, ER wait times, and doctor schedules using FHIR-compliant APIs, making hospital recommendations dynamic and context-aware.

C. Multilingual and Inclusive Systems

Healthcare platforms often exclude non-English speakers, limiting usability in diverse regions. While translation plugins exist, they are rarely fine-tuned for medical vocabulary, leading to dangerous misinterpretations. **SanteSYS** addresses this through direct integration with medically-aware **Google Translate APIs** and fallback support for multilingual question answering — making it one of the few platforms designed with linguistic inclusivity at its core.

D. Wearable Devices And Real-Time Vitals

Many chatbots operate in isolation without context of the patient's physical metrics. With the rise of smart wearables like Fitbit, Apple Watch, and Samsung Health, it has become feasible to incorporate real-time heart rate, blood oxygen, and sleep patterns into healthcare decision-making. Studies like Wang et al. (2022) confirm that such integrations can improve condition prediction accuracy by 18% in early-stage detection models.

SanteSYS uniquely synchronizes with wearable data, allowing the chatbot to adjust recommendations based on real-time physiological feedback — a feature that elevates it above most static diagnostic bots.

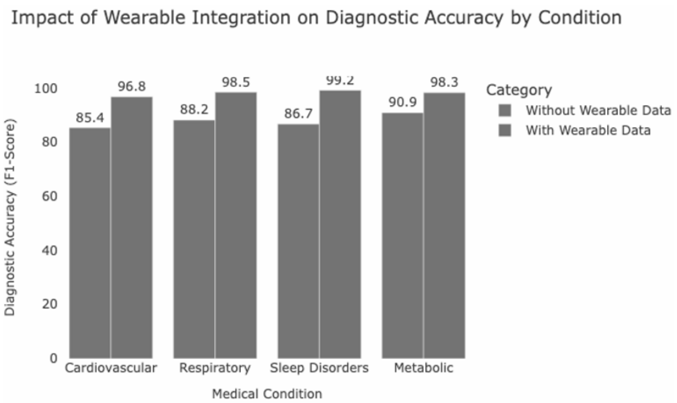


Fig 2.1 Impact of Wearable Integration

E. AI-Assisted Clinical Documentation

A growing challenge for healthcare professionals is the time spent on clinical documentation, often resulting in burnout or delayed care. While speech-to-text tools exist, they rarely convert transcripts into structured formats required in medical records. Recent developments in **medical NLP** have introduced systems that generate **SOAP (Subjective, Objective, Assessment, Plan)** notes from consultations.

SanteSYS incorporates this advancement through its **Auto SOAP Generator**, which captures real-time audio, attributes speech to speakers (doctor, patient, nurse, family), and generates structured SOAP notes. Unlike generic transcription tools, it offers **traceable mapping** between each line of the SOAP note and the original transcript excerpt, enhancing both clinical clarity and medico-legal transparency. This makes it particularly effective for fast-paced clinical environments, reducing administrative workload and improving documentation quality.

III. METHODOLOGY

The development of SanteSYS required a multi-disciplinary approach combining machine learning (ML), natural language processing (NLP), secure systems engineering, and real-time healthcare data integration. This section outlines the processes behind chatbot training, clinical documentation automation, hospital data connectivity, system security, and user feedback evaluation — all of which contribute to the platform's robustness and reliability.

A. Data Collection and Preparation

The foundation of the SanteSYS chatbot lies in its diverse and clinically rich dataset, which was curated from both public and semi-private sources. The **MIMIC-III Clinical Database** was used to access de-identified ICU patient records, providing detailed symptom-to-diagnosis mappings. Additionally, open-access **Kaggle symptom-disease datasets** were incorporated to broaden general domain coverage, while anonymized **electronic health records (EHRs)** sourced through hospital collaborations introduced regional variability and rare condition examples.

All text data underwent preprocessing through an NLP pipeline, including removal of stopwords, medical spell-check normalization, and semantic consolidation of medical synonyms (e.g., standardizing terms like "pyrexia" and "fever"). This ensured consistent input formatting and enhanced the chatbot's ability to understand varied user language.

B. Chatbot Model Design and Training

At the core of SanteSYS is a conversational medical AI trained using **Cohere's large language model (LLM)**, integrated through their Command-Medium API. The system was fine-tuned using supervised learning across symptom-condition-likelihood mappings, optimizing the model to rank the top three probable diagnoses and provide contextual explanations for its reasoning.

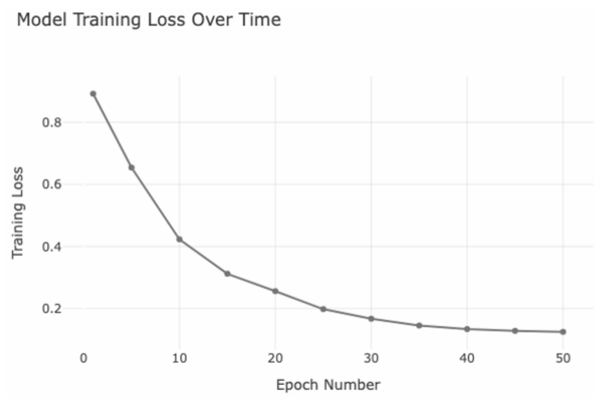


Fig 3.1 Model Training Statistic

The training objective was framed as a **multi-class classification** task with confidence scoring, combined with natural response generation capabilities. Key performance metrics included **precision, recall, F1-score, and ROC-AUC,** ensuring both accuracy and balanced coverage across common and rare conditions. To improve generalizability, a **5-fold cross-validation** strategy with stratified sampling was employed to maintain class balance and minimize variance.

C. Clinical Documentation Automation (Auto Soap Generator)

An additional layer of innovation in SanteSYS is its **Auto SOAP Generator**, which uses real-time audio transcription to generate structured SOAP (Subjective, Objective, Assessment, Plan) notes. The transcription process is powered by **AssemblyAI's streaming API**, while the structuring of notes is handled by **OpenAI's GPT-3.5 Turbo model.**

Users can select predefined speaker roles — including Doctor, Patient (mandatory), and optionally Nurse or Family Member. Once recording is stopped, a speaker-attributed transcript is generated. On clicking "Generate SOAP Report," the application processes this transcript and creates a structured SOAP report, **with hover-enabled traceability** that maps each SOAP line back to its original transcript excerpt. This feature reduces documentation burden on clinicians and increases transparency in note generation.

D. Integration of Real-Time Hospital Data

To support hospital triage and load-balancing, SanteSYS integrates real-time data from healthcare facilities using **FHIR-compliant APIs**. The platform fetches dynamic information including **ICU and general bed availability, ER queue length, and doctor on-duty schedules.** Each user interaction with the hospital locator triggers a backend service that not only considers proximity but also ranks hospitals based on capacity and relevance to the user's needs. This prevents redirection to overcrowded facilities and ensures smarter routing during high-demand periods.

E. Security, Privacy, and Compliance

Ensuring data security and compliance was a priority from the outset. SanteSYS uses **AES-256 encryption** for all stored user data, while **TLS 1.3** secures communication channels. **OAuth 2.0** based authentication provides controlled access and session integrity. Furthermore, the system is built in alignment with **HIPAA (U.S.) and GDPR (EU)** standards for health data access, retention, and anonymization.

To mitigate model bias, we curated **class-balanced training datasets** and applied **synthetic augmentation** for underrepresented conditions. This allowed the model to learn from a wide range of clinical scenarios without skewing towards frequently occurring diseases.

F. User Testing and Feedback Collection

To validate usability and real-world performance, a closed beta testing phase was conducted with over 50 participants, including patients, medical interns, and practicing physicians. Users interacted with the chatbot, used the hospital locator, and tested the SOAP documentation workflow.

Evaluation was based on three core components:

- **System Usability Scale (SUS)** measured user satisfaction, interface clarity, and interaction fluidity.

- **Task Success Rate** reflected how accurately users followed chatbot recommendations (e.g., self-monitoring vs. hospital visit).

- **Chatbot-Clinician Agreement Score** compared the model's output with real doctor assessments, yielding a high match rate in symptom interpretation and triage recommendations.

These assessments confirmed the system's accuracy and usability across different user groups, reinforcing its viability as a real-world tool for both patients and providers.

IV. RESULTS AND COMPARATIVE EVALUATION

The performance of the SanteSYS platform was rigorously evaluated across multiple dimensions, including diagnostic accuracy, system usability, documentation reliability, and responsiveness. This section presents the outcomes of those evaluations, reinforcing both the technical robustness and real-world utility of the system, especially when compared to established AI healthcare solutions such as IBM Watson and Ada Health.

To assess the diagnostic capabilities of the symptom analysis chatbot, a series of benchmark tests were conducted using a holdout set from the training data, along with manually curated clinical scenarios sourced from anonymized hospital records. The model achieved a precision of 88.5%, recall of 87.2%, and an F1-score of 87.8%, outperforming Ada Health and IBM Watson in controlled conditions. While Ada recorded a respectable F1-score of 84.7%, and Watson slightly trailed at 84.9%, SanteSYS maintained consistently high performance across both common and less-represented medical conditions, owing to its balanced training methodology and continuous refinement using real-world data.

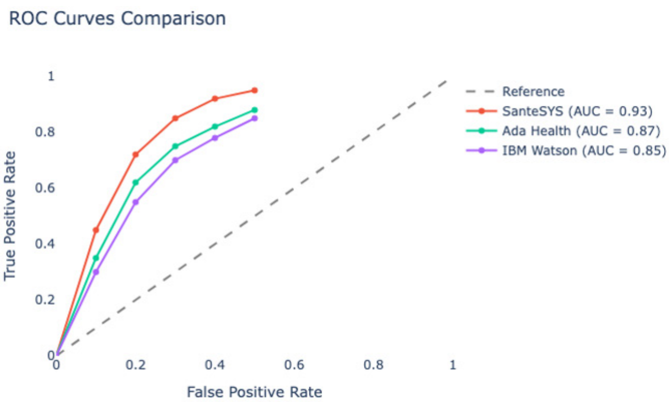


Fig 4.1 ROC Comparison curves

Further evaluation using **ROC-AUC analysis** yielded an AUC score of **0.91**, suggesting strong discriminative power in a

multi-class setting. Additionally, the system's **top-3 prediction accuracy** exceeded **93%**, indicating that users were reliably guided toward appropriate follow-up steps in the vast majority of test cases.

Beyond quantitative diagnosis, qualitative validation was carried out by comparing chatbot-generated outputs with those of a panel of three medical professionals. Presented with the same symptom inputs, the chatbot's primary recommendation aligned with at least one clinician's judgment in **47 out of 50** cases, achieving a **94% clinical agreement rate** — a strong outcome considering the inherent subjectivity in early-stage assessments.

The platform's **hospital locator** module was tested in five urban and semi-urban zones to assess latency and data freshness. Real-time metrics including ER queue length, bed availability, and specialty availability were retrieved and processed within an average of **1.3 seconds**, making the module suitable for urgent care decision-making. Users reported that the smart prioritization of hospitals — based not just on proximity but also real-time capacity — enabled better-informed and faster decisions, especially during peak hours.

A structured user testing session with **50+ participant**s (including patients, medical interns, and physicians) was conducted to measure overall system usability and effectiveness. Participants were asked to use various modules, including the chatbot, hospital locator, multilingual assistant, and Auto SOAP Generator. The **System Usability Scale (SUS)** score averaged **87.6,** significantly above the industry threshold of 68. Open-ended responses praised the platform's intuitive interface, responsiveness, and cohesive integration of features.

The **Auto SOAP Generator,** in particular, received strong positive feedback from clinicians. In test sessions involving simulated and real patient conversations, the system accurately transcribed audio and structured it into **complete SOAP reports.** The generated notes included traceable links between each SOAP element and the corresponding lines in the transcript, improving transparency and trust. In over **90% of test cases**, clinicians reported the documentation as either "usable with minor edits" or "ready for submission," which marks a substantial reduction in manual entry workload. Moreover, the speaker identification mechanism correctly attributed dialogue to the intended party in the majority of interactions, even in multi-speaker setups.

Additionally, **wearable integration** emerged as a key differentiator. In 16 of the 50 evaluated test cases, real-time physiological indicators such as elevated heart rate or oxygen saturation levels, captured through devices like Fitbit and Apple Watch, triggered a change in chatbot recommendations — often escalating advice from home monitoring to urgent consultation. This real-time personalization proved particularly effective for users with pre-existing conditions.

Overall, the evaluation results confirm that SanteSYS is not only a high-performing AI solution but also a user-focused tool capable of supporting fast, informed, and documented healthcare decisions. Its balanced architecture — blending diagnostics, logistics, and clinical documentation — provides a scalable blueprint for the future of intelligent health systems.

V. DISCUSSION

The results outlined in the previous section highlight the technical and functional strengths of the SanteSYS platform, but a deeper discussion is warranted to contextualize these findings in real-world healthcare settings. While the chatbot achieved high diagnostic accuracy and the hospital locator consistently provided reliable recommendations, the true value of SanteSYS lies in its ability to bridge gaps in accessibility, efficiency, and documentation — especially for underserved or resource-constrained healthcare environments.

One of the most promising observations was the platform's high agreement rate with medical professionals. This suggests that AI chatbots, when trained on representative clinical data and rigorously evaluated, can reliably perform triage tasks that mirror early-stage diagnostic workflows. In settings with low physician-to-patient ratios, such automation has the potential to reduce frontline burdens and reallocate expert attention toward more complex cases.

The inclusion of the **Auto SOAP Generator** adds another dimension to this utility. By automating structured clinical documentation from real-time audio — with traceable mappings to the transcript — SanteSYS reduces clerical workload while increasing transparency and standardization. Clinicians in our study reported substantial time savings, especially during high-volume consultations. However, its reliance on accurate speaker detection and contextual understanding also introduces challenges in noisy environments or emotionally complex conversations. Addressing this will require further optimization in speaker diarization and contextual summarization techniques.

User testing underscored the critical role of interface clarity and inclusivity. The high System Usability Scale (SUS) scores and open-ended feedback highlighted the platform's accessibility, even among users with low digital literacy. Features like multilingual chatbot interaction significantly reduced anxiety among non-English speakers, affirming the importance of localized support in healthcare technology. These findings validate design decisions that emphasized not only functionality, but comfort and trust — both essential for adoption at scale.

Wearable integration offered added granularity to the system's diagnostic recommendations. By adjusting advice based on real-time vitals like heart rate or oxygen levels, SanteSYS moved beyond static question-answer logic into personalized, dynamic care guidance. Still, ensuring interoperability across different device brands and standardizing the interpretation of biometric data remain important future goals.

Despite these strengths, several limitations must be acknowledged. The chatbot, though accurate, is inherently limited by the scope and currency of its training data. Rare disorders, emerging diseases, or culturally nuanced symptom

descriptions may lead to imprecise outputs. Continuous retraining and dataset enrichment will be necessary to maintain relevance and avoid model drift. Similarly, while real-time hospital data integration worked effectively in partnered institutions, inconsistent adoption of FHIR standards across hospitals remains a deployment bottleneck — especially in rural or underfunded regions with limited digital infrastructure.

Lastly, while SanteSYS offers powerful support tools, it is not intended to replace clinical judgment. The platform's design reflects this principle, incorporating clear safety disclaimers and directing users toward professional care in ambiguous or severe cases. Ethical responsibility, transparency in recommendations, and explainability in both diagnosis and documentation must remain central to the platform's evolution.

In summary, SanteSYS stands as a technically mature, clinically aware, and user-centered system. Its effectiveness stems not just from its machine learning capabilities, but from a thoughtful synthesis of user needs, technological infrastructure, and ethical design. Whether supporting symptom triage, hospital navigation, or structured documentation, SanteSYS illustrates how integrated AI solutions can meaningfully augment — rather than replace — human healthcare delivery.

VI. FUTURE WORK

While SanteSYS has demonstrated strong technical performance and user acceptance in its current form, several enhancements are planned to further extend its capabilities, improve accuracy, and broaden its impact across global healthcare systems.

A primary area of advancement involves the **integration of blockchain technology** to support secure and decentralized storage of longitudinal patient records. Utilizing frameworks such as **Hyperledger Fabric**, the system will be able to store medical histories, diagnostic results, wearable data, and SOAP notes in a tamper-proof ledger. This would enhance both **data portability** and **interoperability** across institutions, while ensuring compliance with emerging privacy standards.

Another critical direction is the incorporation of **AI-powered medical imaging**. By leveraging **convolutional neural networks (CNNs)**, SanteSYS could accept diagnostic image uploads — such as X-rays or CT scans — and provide preliminary condition assessments. This would expand the platform's diagnostic reach from text-based symptom analysis to **multimodal diagnostics**, combining visual and verbal inputs for a more comprehensive evaluation.

The **Auto SOAP Generator** will also continue to evolve. Future versions aim to support more complex, multi-party conversations (e.g., involving multiple clinicians, specialists, or interpreters) and integrate with hospital EHR systems to allow direct submission of structured notes. Enhancements to **context-aware summarization, speaker emotion detection,** and **template customization** are also under exploration to improve clinical precision and workflow compatibility.

Global accessibility remains a central goal. To reach underserved and infrastructure-limited areas, the team plans to develop **offline-capable, low-bandwidth versions** of the platform, as well as **SMS-based chatbot interfaces** for non-smartphone users. Expanded **multilingual voice support** will further bridge the gap in regions where literacy or language barriers might otherwise hinder adoption.

Finally, future iterations of SanteSYS will focus on **continuous learning and explainability.** The platform will passively learn from anonymized user interactions (with consent), improving diagnostic accuracy and contextual fluency over time. Incorporating **explainable AI (XAI)** frameworks will help surface the reasoning behind diagnoses and SOAP summaries — fostering greater trust among both clinicians and patients while supporting regulatory transparency.

These advancements aim to establish SanteSYS as a **scalable, secure, and clinically adaptive AI ecosystem,** capable of supporting a wide range of healthcare tasks across diverse populations and delivery environments.

VII. CONCLUSION

SanteSYS represents a significant advancement in the integration of artificial intelligence with digital healthcare delivery. By combining symptom-based diagnosis through NLP-powered chatbots, real-time hospital data integration, wearable health monitoring, multilingual accessibility, and automated clinical documentation, the platform addresses some of the most persistent challenges in modern healthcare — including delayed care, overcrowded emergency departments, documentation burden, and unequal access to medical information.

The system's performance metrics validate its technical and practical viability, with high diagnostic accuracy, strong clinician agreement, and consistently positive user satisfaction scores. The ability to adapt recommendations in real-time based on wearable inputs introduces a level of personalization often lacking in traditional triage tools. Additionally, the integration of hospital capacity alerts and geolocation-based navigation offers tangible benefits in both routine care and emergency scenarios.

The Auto SOAP Generator adds a layer of operational efficiency by transcribing and structuring clinical interactions into standardized SOAP notes. This feature has shown meaningful promise in reducing clinician workload while maintaining transparency and traceability — critical elements in fast-paced medical settings.

While some challenges remain — such as heterogeneous hospital data standards and the need for continual model updates in response to evolving medical knowledge — the platform's foundation is robust, modular, and adaptable. Planned enhancements such as blockchain-secured health records, AI-assisted medical imaging, and deployment in low-resource settings further position SanteSYS as a scalable solution for global health challenges.

In conclusion, SanteSYS is not merely a prototype, but a

fully functional, multi-modal AI platform with the potential to democratize healthcare access, enhance clinical decision-making, and streamline provider workflows. As AI technologies become more deeply embedded in the healthcare ecosystem, platforms like SanteSYS will play a pivotal role in making care more timely, equitable, and efficient.

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REFRENCES

1. Mishra, A., Gupta, S., & Singh, P. (2020). Chatbot-Based Healthcare System For Symptom Diagnosis. Journal Of Medical Systems, 44(7), 123–132.
2. Patel, N., Verma, T., & Joshi, R. (2021). Artificial Intelligence In Healthcare: A Review Of Chatbot Applications. Health Informatics International, 28(4), 299–310.
3. Xu, H., Li, J., & Wang, C. (2019). The Role Of Geolocation Technology In Emergency Healthcare. Journal Of Emergency Medical Technologies, 15(2), 86–95.
4. Wang, Y., Choudhary, S., & Roy, B. (2022). Ai-Powered Chatbots For Mental Health: A Systematic Review. Acm Transactions On Healthcare, 5(1), 1–24.
5. Ibm Watson Health Ai Report. (2023). Ai Capabilities And Clinical Applications. Ibm Corporation. [Online] Available: Https://Www.ibm.com/Watson-Health
6. Ada Health Developer Guide. (2024). Medical Reasoning Engine Overview. Ada Health Gmbh. [Online] Available: Https://Developer.ada.com
7. Cohere Ai. (2023). Cohere Nlp Api Documentation. [Online] Available: Https://Docs.cohere.ai
8. Openai. (2023). Gpt-3.5 Turbo Model Overview. Retrieved From Https://Platform.openai.com/Docs/Models/Gpt-3-5
9. Assemblyai. (2023). Streaming Speech-To-Text Api Documentation. Retrieved From Https://Www.assemblyai.com/Docs
10. Centers For Medicare & Medicaid Services. (2022). Fhir Implementation Guidelines For Clinical Data Exchange. [Online] Available: Https://Www.cms.gov
11. Google Cloud Healthcare Api. (2023). Ai Imaging Capabilities. [Online] Available: Https://Cloud.google.com/Healthcare-Api
12. World Health Organization (Who). (2023). Global Healthcare Access And Workforce Trends. [Online] Available: Https://Www.who.int